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Research Article

Income Inequality in Relation to Policies, Taxes, and Gender: A Bibliometric Analysis

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ABSTRACT

The study of income inequality provides a relevant context for understanding the diversity of findings related to policies, taxes, and gender. This bibliometric study analyzed income inequality concerning current policy structures, taxes, and gender found in the literature. The global publications addressing income inequality published between (1961 – 2021) increased in the 1990's. The production of scientific research increased steadily over time and by 2021, the number of articles grew exponentially by over 1000%. Data were collected using bibliometric tools, whereby the most productive countries, institutions, and journals were identified and mapped to the tendencies of productivity and concentration indexes. Using keywords and reference searching approaches, the resulting algorithm retrieved 16,376 scholarly articles from Scopus and World Inequality Databases. Data were mapped and the scientific analysis, yielded valuable insights into the impact of economic policies, taxes, and gender on income inequality. Our results are consistent with existing research, showing that developed countries had the highest productivity in terms of publications related to income disparity. Additionally, the data revealed that the most cited researchers were domiciled in the United States from predominantly Ivy League, or Carnegie classified Tier 1 institutions. Finally, this research is significant in the sense that it broadens the knowledge in the topic of income inequality by emphasizing the relevance of the development, authorship and domicile of the existing studies in the topic. The relevance lies in that these studies are often used as the basis for the design and implementation of government procedures, fiscal strategies, and policies that aim to reduce the income gender gap. The resulting outcome of this bibliometric paper should be considered by policy makers, institutions of higher education, universities, colleges, and libraries.

Keywords: Bibliometrics, Bibliometric Study, International, Income Inequality, Technological Rationality, World Inequality.

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INTRODUCTION

The main contribution of this study is to fill a knowledge gap related to the institutional, country, and author concentration of income inequality research and its implication for the development of public policies, taxation plans, and opportunities for males and females. Technological rationality is considered a factor with the potential to lead human reality. This is in terms of facilitating a just advantage of human capital over financial capital and real estate. Advancing human capital is not the role of just one tier or one gender in any society. Individuals from all spheres and gender can be capable managers, stockholders, and policymakers and develop the skill to reduce nepotism. In so doing, economic and societal inequalities would be reduced as well as economic and democratic rationality.[1-3] Economic and demographic rationality encompasses how an individual gets the most out of a given situation based on the individual's own needs, wants, and desires.[4]

Income inequality is a direct result of both economic and demographic rationality since rich countries remain rich and developing ones remain poor. However, when analysing this problem using a gender approach it is observed that more men have greater economic affluence when compared to women worldwide.[5-7] Income inequality is defined as an indicator of how material resources are distributed across the general society. That is a significant reason for causing conflict, limiting cooperation, or creating psychological and physical health stresses.[8,9] Studying economic inequality and inequity is essential because such inequalities are embedded in social justice and economic efficiency theories. According toAmarante *et al.*,[10] the concerns about inequality must be examined from a social justice point of view, inequality of opportunities based on gender and other

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metrics, and inequality of income and outcomes. Previous bibliometric studies of economic inequality in the last decade revealed that several economists and sociologists had approached the topic by analyzing the causes of rising wealth inequality.[11,12]

Furthermore, the role of life-cycle wealth and inherited wealth using theoretical and non-theoretical models has been examined. It was found that a solid correlational and causal relationship exists between the unequal distribution of economic resources and economic growth. These results were found by carrying out a bibliometric review of 146 papers (both theoretical and empirical) that studied the subject using a clusterization method based on keywords such as wealth holders, empirically grounded models, wealth transfers, economic growth, and wealth inequality. It is worth highlighting that an empirical exercise common among these studies is a correlational analysis on per capital GDP level, primary school enrollment ratio, as well as the Gini coefficient of 70 countries that include democracies and non-democracies, including United States, United Kingdom, Australia, Italy, Netherlands, Spain, among others economies.[13]

In the work of Crespo *et al.*,[14] it is discussed that income inequality was due to differences in circumstances and possessions of or lacking opportunities in a given society. They also indicated that the attempt to compensate for societal inequalities is lacking in the literature. However, the work of Crespo *et al.*,[14] provides an exciting and relevant view of the subject. More scientific research needs to be conducted–regarding economic inequality and its relationship to public policies, tax structures, and gender.

LITERATURE REVIEW

Concerning the evolution of studies regarding the distribution of income, research that includes empirical income distribution in a community reveals that wealthy families have a certain degree of incentive to isolate themselves from the rest of the economy in order to provide the highest level of education for their children at the lowest cost, causing low-income families to be isolated from the rest of the population, thus inducing persistent or permanent poverty for sectors of the population being unable to generate sufficient human capital investment in their children to escape from low-paying occupations.[15]

In contrast, the theory of inequality measurement from Pigou–Dalton states that if wealth is transferred from a more affluent person to a poorer person, without reversing their ranks, inequality goes down, and of course, a transfer in the opposite direction makes inequality go up;[16] thus, in a capitalist democracy, as all individuals are formally equal and all institutions are open to everyone, the highest classes have to enter the proverbial competition for scarce resources and the upward mobility for the lower classes is possible, since, in a formally democratic society, a high social position is based on some achievement legitimized by merit.[17]

In that sense, Atkinson,as cited in Wernerová,[18] proposes that the notion of a good society is incompatible with the current level of economic inequality since this is progressive and tries to show ways to help reduce inequality by analyzing distribution problems, appealing to government officials to take action and lead to the regulation of economically negative influences such as unemployment, poverty, globalization;[18] other authors such as Lenski's and Wallerstein's were primarily interested in how major shifts in the mode of production produce changes in the macrostructure, considering the societal or international distribution of re- sources-usually over relatively long periods.[19]

Given the level of discussion related to the evolution of the subject, the present bibliometric analysis seeks to address this need and is guided by the following four pertinent Research Questions (RQ) and six Research Goals (RG).

Research Questions (RQ) and Research Goals (RG)—Objectives and scope

Our bibliometric study approach relates to income inequality considering the following RQs and RGs:

- RQ1: How many articles addressing economic inequality were produced between 1961-2021?
  - RG1: Assess the general productivity of articles/scholars per country, including a diachronic analysis of papers published since the first mention in the literature (1961–2021)
  - RG2: Breakdown the geographic analysis of income inequality at the country, institutional, and level of journal
- RQ2: What are the most relevant keywords associated with income inequality?
  - RG3: Conduct an analysis of publications by subject area to unearth income inequality in the literature between 1961–2021
  - RG4: Present the research approaches by keywords found in the literature.
- RQ3: Who are the most influential authors in income inequality research found in the literature between 1961 – 2021?
  - RG5: Determine the influence structure by citation (authors), based on the number of citations.
- RQ4: What are the characteristics of the publications on income inequality of the most productive nations with emphasis on the economic context? (policies, tax structure, and gender).
  - RG6: Assess the information showing a descriptive analysis of income equality in terms of (policies,

tax structure, and gender breakdown) in the most productive countries.

To answer the four RQs, we propose the following six RGs. Each research goal is designed to furnish additional answers to the four RQs posed. The model below in Figure 1 shows the conceptual framework for the RQs to the RGs.

Conceptual Framework

As shown in Figure 1, there are four primary RQs and six RGs. This is because each research question was based on the purpose of the research. Therefore, research questions 1 and 2 have two RGs to answer the research questions fully. In addition, RQs 3 and 4 have one RG each, to dig deeper into the analysis to answer the RQs posed.

This paper aims to provide a general overview of research conducted between 1961-2021 addressing income inequality. Specifically, bibliometric analysis techniques of performance analysis and science mapping are used to analyze the three themes of policy structures, taxation, and gender breakdown that impact income equality. This is in line with the seminal work of Donthu *et al.*,[20] These themes will be further evaluated by eximining into the relevant factors: general productivity, research approaches, and influence structure at a country, institution, author, and journal level. This approach is diagrammed in Figure 2.

As shown in Figure 2, to analyze income inequalities, the independent variable, we posed four RQs and six RGs. The independent variables of policy structures, taxation, and gender breakdown, helped to facilitate the analysis. The dependent variables, general productivity, research approaches, and influence structure at a country, institution, author, and related journal level were evaluative themes and factors selected further to provide a broad analysis of income inequality. This is one way this research adds value to the body of research by examining into the themes and factors. The outlined themes and factors are thoroughly discussed in subsequent sections of this paper. The rest of this manuscript is structured as follows: *Section 1:* Methods—explaining the methodology of the bibliometric study; *Section 2:*

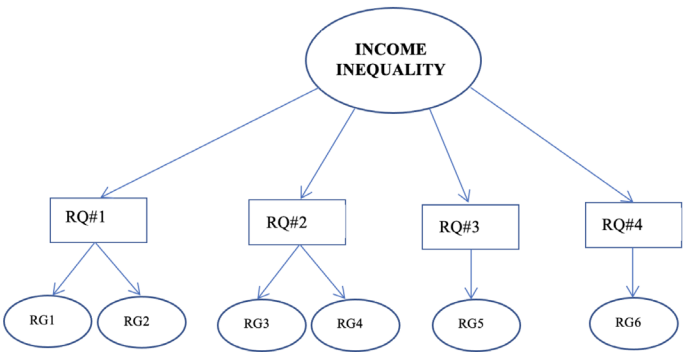

Figure 1: Model of Research Questions and Research Goals to Understand Income Inequalities.

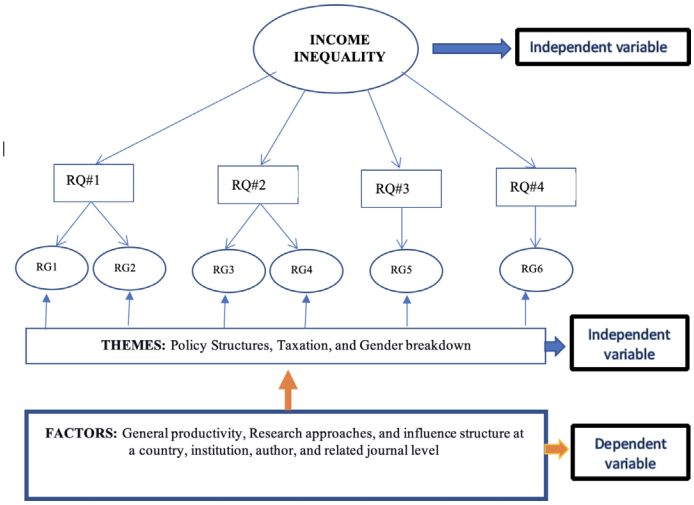

Figure 2: Bibliometric Analysis Linked to the Relevant Themes and Factors of Income Inequality.

Selection of the databases and keywords; *Section 3*: Data analysis—using bibliometric techniques showing both relationships and evaluative powers. *Section 4*: Results section—presenting the outcomes of the bibliometric analysis—descriptive data regarding variables and levels related to the research problem to provide objective and verifiable answers to the research questions. *Section 5*: Summary of the main findings and conclusions of the paper. Finally, implications for policy and practice and further research are advanced at the end of the manuscript.

METHODOLOGY

This paper aims to provide a detailed overview of research conducted between 1961-2021 addressing income inequality. Specifically, bibliometric analysis techniques of performance analysis and science mapping are used to analyze the three themes of policy structures, taxation, and gender barriers that impact income equality. The bibliometric methodology has been postulated and used successfully by seminal researchers such as Donthu *et al.*,[20] Jain *et al.*,[21] and Buhren *et al.*,[22] In addition, the bibliometric methodology has gained traction over the years to analyze large databases that would be too cumbersome and impractical to be analyzed by hand Donthu *et al.*,[20]

This bibliometric analysis of the literature addressing income inequality evaluated the structural relationships between and among research constituents, including the metrics, authors, countries, institutions, and related topics. In addition, performance analysis and science mapping were conducted as we examined income inequality. These are two techniques recommended by Donthu *et al.*,[20] for this type of research to be valid, reliable, and relevant.

On the other hand, the World Inequality Database (WID) houses extensive data on the evolution and distribution of income, and wealth, globally, both inside and between countries, combining

different data sources available (such as financial data, survey data, and national accounts) in a systematic way.[23]

Relevance of a Bibliometric Review to Understand the Evolution of Economic Inequality

Bibliometric analysis is a form of scientific communication that allows researchers to track the progression in the field of science, identify trends in research topics across disciplines, and learn how scientists develop knowledge and disseminate findings. Bibliometric studies can also be used for knowledge evolution (Amate-Fortes *et al.*,[24] Donthu *et al.*,[20] and to obtain an overview of the state of research in various scientific disciplines that have increased significantly since the evolution of information technologies and the emergence of the Internet, the development of various specialized tools and software, the availability of data/information online, have increasingly facilitated the systematization of information and has boosted the development and publication of these studies.[25]

Some of the questions that bibliometric studies can answer relate to issues such as mapping vast amounts of available research that describe developmental trends and status in a comprehensive, systematic, and replicable manner. This is based on a set of quantitative methods used to measure and assess scientific research at the journal, country, region, institution, and author levels.[26] In this sense, the main contribution of the present study is to fill the gap by identifying, synthesizing, and evaluating extant research on income inequality.

The bibliometric review leads to a comprehensive view of the general productivity, research approaches, and influence structure of the research field related to income inequality to answer four RQs. The analysis carried out in the present work took into consideration descriptive quantitative bibliometric indicators (Donthu *et al.*,[20] addressing income inequality. The process followed is explained to achieve the RGs and answer the four RQs. (1) how keywords were selected, (2) types of documents considered, (3) the most important indicators, (4) the specific analysis for bibliometric review, and (5) ending with the discussion regarding the findings and research proposal for future research.

Data Collection

The data were collected from Scopus and the World Inequality databases. Scopus is a source-neutral abstract and citation database curated by independent subject matter experts, with tools that generate precise citation search results and automatically update researcher profiles. Currently, the Scopus database includes more than 75 million records, with 68 million post-1970 records. These records include more than 8.5 million Open Access articles, 23,500 peer-reviewed journals, 740 book series, 300 trade publications, articles in press from over 8,000 titles, and many references. Records are obtained from national and international publishers, focusing on the (1) arts and humanities, (2) business, (3) law, (4) medicine, (5) science, (6) social sciences technology, and (7) other subject areas.

Additionally, the data retrieved from WID included the frequency of nominal variables based on the name of specific documents that are input for the World Inequality Lab Dataset.[7]

The WID focuses on the evolution and the distribution of income, and wealth, globally, both inside and between countries, combining different data sources (such as financial data, survey data, and national accounts) systematically.[23]

Process for Selecting the Studies

The sample of literature reviewed on income inequality spanned the years between 1961-2021. From an analysis of the Scopus database, we present the most relevant and influential articles between 1961 - 2021. The Scopus database was selected based on three criteria (1) vast array and comprehensiveness of digital records, (2) the frequency with which the Scopus data is updated in real-time, and (3) robust ability of the database to debug and process data using Boolean terms (Jain *et al.*,[21] Mugomeri *et al.*,).[27,28]

There were articles excluded based on the key terms selected. This is in aligned with the work of Transfield *et al.*,[31] According to Jain *et al.*,[21] the first step in running queries in bibliographic databases is the identification of the relevant keywords. In this research, using the Scopus database, the four primary keyword searches are summarized in Table 1.

As seen in Table 1, the *first* keyword algorithm entered was ("income inequality") yielding over eleven thousand papers; *second*, ("income inequality" policies), yielding over three thousand papers; *third* ("income inequality" taxes) yielding close to one thousand papers; *fourth* we entered ("income inequality" gender) yielding close to six hundred papers. For each keyword search, the parameter "ALL" was selected as the document type to ensure an objective comparison among all papers available. In addition, using the option "show all abstracts" and the sorting

Table 1: Algorithm used in Scopus Database for Income Inequality as a General Subject and Related Subjects of Interest.

Algorithm	Keyword used	Document results
TITLE-ABS-KEY	("income inequality")	11, 461
TITLE-ABS-KEY	("income inequality" policies)	3, 329
TITLE-ABS-KEY	("income inequality" taxes)	991
TITLE-ABS-KEY	("income inequality" gender)	595
TOTAL		16, 376

option; "cited by highest" were all in place to get the desired results. With the appropriate key words algorithm, the data analysis would be trustworthy.

Data Analysis

According to Kulaki,[32] "Bibliometric is defined as the use of statistical methods to analyze the bibliometric publications data such as peer-reviewed journal articles, books, conference proceedings, periodicals, reviews, reports, and related documents. It has been widely used to present the relations of research domains with quantitative methods." This present research employs this definition to deepen readers' understanding of income inequality. Various studies have used different software packages such as Bibliometrix R, CiteSpace, BibExcel, and VOSviewer. In this research, we utilized BibExcel and VOSviewer due to the access to these programs and their ability to manage and analyze the data uploaded from Scopus. This is consistent with the works of Persson *et al.*,[33] and Jain *et al.*,[21] The data analysis considered three independent variables: general productivity, research approaches, and influence structures. These independent variables help provide an analytical and descriptive view of the evolution of the research articles addressing "income inequality" and are represented in Table 2.

Predicated on the research design presented in Table 2, the results show an overview of the main aspects relevant to the evolution of the keyword "income inequality" in terms of general productivity, research approaches, and influence structure at the country, institution, journal, author, and keyword level. Additionally, the results of the bibliometric analysis provide a descriptive comparison that considers the combination of the terms "income inequality" with "policies," "taxes," and "gender" (see Table 1), ensuring a worthwhile Ck concentration.

Applying a Concentration index (Ck) Formula to Understand Key Participants

To understand better the level of concentration of productivity in terms of documents published at the country, institution, and journal levels, the Ck concentration index was used. This is an index that presents a sum of the shares in publication given a "K" largest institution, journals or countries in this scientific field, calculated as expressed in formula 1.[34]

Formula 1: Ck concentration index

$$C_k = \frac{\sum_{i=1}^{k} \text{Documents}}{\sum_{i=1}^{N} \text{Documents}} \quad [1]$$

Source: Adapted from.[34]

Where K represents the number of documents published in a journal, country, or institution related to the scientific field. Using the Ck concentration index, a description of the relevant concentration in the production and citation of a specific subject in regions, institutions, and journals is provided.

The way to interpret the index is as follows: Ck < 33% = low concentration; 34% < Ck < 67% = moderate concentration; Ck > 68% = high concentration. In the next section, the results of total research productivity by country, using the Ck concentration index as the method of analysis is presented.

RESULTS

In this section, the RQs along with the RGs will be answered. Then, the results are presented based on each research question.

General Productivity of Articles Addressing "Income Inequality"

- **RQ1:** How many articles addressing economic inequality were produced between 1961-2021?
  - RG1: Assess the general productivity of articles/scholars per country, including a diachronic analysis of papers published since the first mention in the literature (1961 – 2021).
  - RG2: Break down the geographic analysis of income inequality at the country, institutional, and journal levels.

To answer RQ1, the descriptive analysis of "income inequality" was used as the base topic that leads to a more holistic understanding of scientific production and general contribution to scientific research. The results indicate a diachronic perspective of the number of documents published since the concept was mentioned in the available literature.

RG1a: Diachronic Analysis by the Number of Papers Yearly

Regarding papers published since the first mention in the literature (1961 – 2021), it is relevant to highlight the positive tendency represented in the slope shown in Figure 3.

As seen in Figure 3, the production of scientific research increased steadily over time. The first article recorded from the Scopus Database was in 1961. By 2021, the number of articles grew exponentially by over 1000%. The analysis yielded 1,071 related articles addressing income inequality. Noteworthy is that in the year 2014, the production of scientific research on "income inequality" surpassed 500 publications, reaching 532 related articles. In the next section, an examination of the productivity of articles by country will be presented.

RG1b: Country Productivity from 1961 - 2021

Concerning article productivity per country (see Table 3), it is evident from the analysis that the most productive countries in

Table 2: Research Design of the Bibliometric Analysis.

Dependent variable	Independent variable	Dimension	Variable	Quantitative items
Evolution of the research field in income inequality, and policies, taxes, and gender as related subjects.	General productivity (RQ#1)	Diachronic (RG1)	Quantity of papers (RG1a)	Papers published since the first mention in literature (1961–2021).
			Country productivity (RG1b)	Most productive countries in the considered period (1961–2021).
		Geographic (RG2)	Country level (RG2a)	Tendencies of productivity in the most productive countries.
				Concentration index of productivity.
			Institutional level (RG2b)	Most productive institutions.
				Concentration index of productivity on institutions.
			Journal level (RG2c)	Most productive journals.
				Scope and subjects of the most productive journals.
	Research approaches (RQ#2)	Subject area (RG3)	Subject area (RG3a)	Quantity of documents by subject area.
			Common subjects (RG3b)	Bibliometric network by subject.
		Keywords (RG4)	Related keywords (RG4a)	Main keywords related to the field.
				Most common subjects in leading journals related to the field.
	Influence structure (RQ#3)	Citation (RG5)	Diachronic (RG5a)	Annual citation structure.
			Authors (RG5b)	Most influential authors.
			Papers (RG5c)	Most cited papers.
				Overview of most influential papers.
	Access to information (RQ#4)	Text mining (RG6)	Type of documents as inputs for the World Inequality Lab Dataset (RG6a)	Frequency of nominal variable based on the name of specific documents that are input for the World Inequality Lab Dataset.[7]

terms of scientific contribution related to "income inequality" are grouped by subject reflecting concentration index at 3, 7, and 10 degrees. Table 3 presents the 20 most productive nations where research was conducted on income inequality.

As seen in Table 3, it is evident that 80% of the productivity is concentrated in 10 prolific countries. These countries are the United States (3,883), United Kingdom (1,251), China (691), Germany (645), Canada (564), Australia (492), Italy (432), Spain (414), Netherlands (344), and France (338). It is worth highlighting that 46% of "income inequality" research is siloed in two wealthy developed North American countries, (1) The United States and (2) Canada. Why is there such a concentration of articles addressing income inequality in these two countries? The geographic analysis will provide the answer to this question.

RG2a: Geographic Analysis at Country Level

This section presents a geographic analysis at the country level, providing a more in-depth analysis of the productivity in the top 10 most productive countries over the last 60 years (1961 – 2021). A country-level analysis during this period will provide a better understanding of the most prolific countries in this research regarding income inequality, as shown in Table 4.

As shown in Table 4, there was a total of 3,885 papers addressing income inequality. Each decade saw a progressive increase of articles globally. For example, between 1961-1971, there were a total of six articles; by 1981, this number was 55; 1991 saw this number more than doubling to 141; In 2001, there were 392 articles; in 2011, this number more than tripled to 1,056. In 2021, the USA produced 2,235 articles. To better understand the data presented in Figure 4 and further substantiate the findings, a line

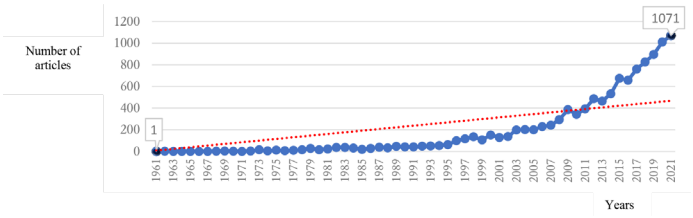

Figure 3: Number of Documents Published that Include "Income Inequality".

Table 3: Twenty Most Productive Countries from 1961 – 2021.

Ck	Country	Documents	%	% Accumulated
3	United States	3,883	35%	35%
	United Kingdom	1,251	12%	47%
	China	691	6%	53%
7	Germany	645	6%	59%
	Canada	564	5%	64%
	Australia	492	4%	68%
	Italy	432	4%	72%
10	Spain	414	4%	76%
	Netherlands	344	3%	79%
	France	338	3%	82%
20	Brazil	316	3%	85%
	Japan	261	3%	88%
	India	255	2%	90%
	Sweden	238	2%	92%
	South Korea	235	2%	94%
	South Africa	194	2%	96%
	Russian Federation	154	2%	97%
	Malaysia	148	1%	99%
	Switzerland	141	1%	100%

graph that reflects the differences in productivity in the most productive countries from (1961 – 2021) is presented.

Figure 4 shows a marked difference in the production of the articles from the United States in 2021 compared to the other countries, considering both the times series and the last record (296 publications compared with 133 for China, the second best). To enrich this information, it is essential to augment the presented data by including information disaggregated at the institutional level, country of origin, and overall productivity with the corresponding Ck level.

RG2b: Production at the Institutional Level

From the application of the concentration index to the data, it is evident that in the most productive institutions, the results show

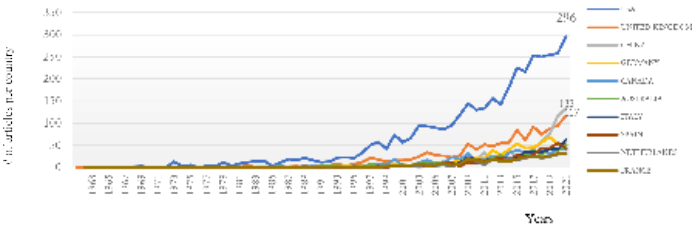

Figure 4: Performance of Scientific Research Productivity per Country 1961-2021.

that top-tier academic or not-for-profit institutions generated the majority of "income inequality" research. Table 5 shows the concentration of "income inequality" research segregated by the institution's name and the documents by affiliation based on the articles published in income inequality in the Scopus database.[35]

In Table 5, it is evident that more than 50% of the total publications available were concentrated in 8 institutions presenting a Ck (8) with 53%, which is an important indicator of concentration in income inequality research. The analysis of journal level will be discussed in the section that follows.

RG2c: Analysis at Journal Level

In terms of the leading journals, the list of the ten most productive journals is represented by scientific publications specialized in the related subject areas such as social sciences, income and wealth, development, applied economies, and modeling. Table 6 shows the total production of documents and the accumulated percentage (%A*).

From Table 6, it is observed that an index of Ck (4) of around 50% of productivity (Social Science and Medicine, Review of Income and Wealth, Social Indicators Research and World Development journals) is clustered in three top-tier journals. (1) Social Science and Medicine, 20%; (2) Review of Income and Wealth, 14%; (3) Social Indicators Research, 13%. This is a revealing, relevant concentration level of article production related to income inequality.

In summary, the information included in this section contributes to understanding the general productivity relating to RQ1. Additionally, from the analysis of data, the evolution of the research field "income inequality" is characterized and evidenced by a steady increase over time, growing exponentially, with a principal level of concentration in some wealthy developed North American countries (the United States and Canada); this remarkable level of concentration is also present at the institutional and journal level. In answering RQ1, 16,376 articles addressing income equality were analyzed in this research. The data analysis to answer research question two follows in the next section.

Table 4: Tendencies of Productivity in the 10 most Productive Countries.

Year	USA	UK	China	Germany	Canada	Australia	Italy	Spain	Netherlands	France
1961	0	0	0	0	0	0	0	0	0	0
1962	0	1	0	0	0	0	0	1	0	0
1963	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0
1968	2	0	0	0	0	0	0	0	0	0
1969	3	0	0	0	0	1	0	0	0	0
1970	1	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0
1972	1	1	0	0	0	0	0	0	0	0
1973	13	1	0	0	0	0	0	0	0	0
1974	3	1	0	0	0	0	0	0	0	0
1975	6	1	0	0	2	0	0	0	1	0
1976	0	0	0	0	1	2	0	0	1	1
1977	4	1	0	0	0	0	0	0	1	0
1978	3	2	0	0	0	1	0	0	2	0
1979	12	1	0	0	2	1	0	0	2	0
1980	4	2	0	0	1	1	0	0	0	0
1981	9	1	0	0	3	1	0	0	0	0
1982	12	5	0	0	0	0	0	0	1	0
1983	14	1	0	1	2	1	0	0	2	0
1984	15	1	0	0	1	1	0	0	2	0
1985	4	1	0	1	2	0	0	0	2	0
1986	11	0	0	0	4	3	0	1	0	1
1987	19	2	0	1	1	1	1	0	1	0
1988	17	3	0	0	0	2	0	0	1	1
1989	21	1	0	0	1	0	0	1	4	0
1990	16	2	0	0	4	1	0	0	1	1
1991	12	4	0	0	1	3	0	0	2	1
1992	13	5	1	0	1	4	1	0	0	1
1993	22	8	0	2	2	4	0	0	2	1
1994	23	4	0	3	2	0	0	0	1	1
1995	21	8	0	4	2	2	0	0	3	0
1996	33	12	0	3	0	2	0	0	2	0
1997	50	21	1	7	4	7	1	1	2	0
1998	58	18	2	5	8	5	1	3	2	0
1999	42	13	1	2	6	6	1	0	3	2
2000	73	16	3	8	19	5	2	3	3	4
2001	57	16	3	6	4	6	3	6	4	3
2002	67	18	2	5	5	5	3	2	3	4
2003	96	25	1	5	11	9	5	4	4	9
2004	93	34	2	3	17	12	7	2	7	4
2005	90	28	4	5	9	12	5	5	5	6
2006	86	26	15	11	9	9	6	10	6	10
2007	96	23	6	10	23	10	4	11	3	5
2008	119	27	17	19	19	8	11	3	8	8
2009	145	54	25	21	31	21	23	12	21	18

Table 4: Cont'd.

Year	USA	UK	China	Germany	Canada	Australia	Italy	Spain	Netherlands	France
2010	130	40	19	21	15	16	17	11	14	18
2011	134	52	34	21	17	8	15	13	6	12
2012	156	48	19	39	26	21	18	18	19	19
2013	143	55	17	28	18	28	19	22	13	14
2014	182	57	36	40	33	16	16	19	21	13
2015	225	84	25	54	39	27	24	28	17	19
2016	217	62	33	44	34	29	35	24	21	23
2017	253	92	41	45	29	39	36	28	25	26
2018	250	75	59	57	43	29	35	44	21	23
2019	255	88	76	69	30	43	41	44	24	26
2020	258	95	117	52	42	39	41	55	30	32
2021	296	117	133	53	40	51	63	43	31	32
Total	**3885**	**1253**	**692**	**645**	**563**	**492**	**434**	**414**	**344**	**338**

Table 5: Most Productive Institutions Based on Ck Concentration and Productivity Indexes.

CK	Affiliation	Country	Documents	%	% A
	London School of Economics and Political Science	United Kingdom	141	9%	9%
	Harvard University	USA	131	8%	17%
	The World Bank, USA	USA	123	7%	24%
	Harvard T.H. Chan School of Public Health	USA	108	7%	31%
	University of Toronto	Canada	102	6%	37%
	University of Oxford	United Kingdom	94	6%	43%
	Cornell University	USA	88	5%	48%
8	University College London	United Kingdom	86	5%	53%
	University of Michigan, Ann Arbor	USA	86	5%	58%
10	Columbia University	USA	84	5%	63%
	University of California, Berkeley	USA	80	5%	68%
	Stanford University	USA	77	5%	73%
	The University of North Carolina at Chapel Hill	USA	69	4%	77%
	National Bureau of Economic Research	USA	68	4%	81%
	Princeton University	USA	66	4%	85%
	Beijing Normal University	China	64	4%	89%
	University of Cambridge	United Kingdom	64	4%	93%
	Peking University	China	63	4%	97%
19	Institut Zur Zukunft Der Arbeit	Germany	62	3%	100%

Research Question # 2

– RQ2: What are the most relevant keywords associated with income inequality?

- RG3: Present the research approaches by keywords found in the literature
- RG4: Conduct an analysis of publications by subject area to unearth income inequality in the literature between 1961 – 2021.

This research analyzed the most relevant keywords associated with income inequality. In addition, the repeatedly used keywords/phrases in the title/abstract of the papers in this bibliometric analysis was identified.

Table 6: Top 10 Journals regarding Income Inequality by Concentration of Productivity, Scope, and Subjects.

CK	Journal	Scope and Subjects	Total	%	% A*	Cite Score 2021
1	Social Science and Medicine	Publishes original research articles both (empirical and theoretical), reviews, position papers, and commentaries on health issues, to inform current research, policy, and practice in all areas of common interest to social scientists, health practitioners, and policymakers.	201	20%	20%	6
2	Review of Income and Wealth	Publishes furthering of research on national, economic and social accounting, including the development of concepts and definitions for the measurement and analysis of income and wealth; the development and further integration of systems of economic and social statistics, and related problems.	140	14%	34%	3.4
3	Social Indicators Research	Publishes results of research on the quality of life and includes studies that reflect developments in the field. Devotes special attention to studies on such topics as the sustainability of life, sustainable development, and the relationship between quality of life and sustainability.	133	13%	47%	4.3
4	World Development	Is a multi-disciplinary monthly journal of development studies that seeks to explore ways of improving standards of living, and the human condition generally, by examining potential solutions to problems such as: poverty, unemployment, malnutrition, disease, lack of shelter, environmental degradation, inadequate scientific and technological resources, among others.	99	9%	56%	8.2
5	Applied Economics Letters	Publishes short research and discussion letters on all areas of applied economic analysis, including micro and macroeconomics, financial economics, and more.	82	8%	64%	1.7
6	Journal of Economic Inequality	Provides a forum for analysis and measurement of economic and social inequalities, using theoretical and empirical approaches in topics such as: differences within and between countries, and globally; inequalities of outcome and of opportunity, poverty, and mobility; univariate and multivariate approaches; differences between socioeconomic groups; etc.	78	8%	72%	2.2
7	Applied Economics	Applies economic analysis to both public and private sector related problems, particularly quantitative and empirical studies with practical applications.	75	7%	79%	2.6
8	Economic Modelling	Publishes complete versions of many large-scale as well as macroeconomic models (for advanced and less developed countries and both closed and open economies) which have been developed for policy analysis.	75	7%	87%	4.4
9	Plos One	A multidisciplinary and interdisciplinary journal that accepts research in over two hundred subject areas across science, engineering, medicine, and the related social sciences and humanities.	69	7%	94%	5.1
10	Economics Letters	Aims to be a valuable addition to the specialist literature, offering quick dissemination and easy accessibility of new results, models, and methods in all fields of economic research.	65	6%	100%	2.9

RG3: Related Keywords Found in the Literature

Regarding a related keywords analysis to the "income inequality," the top 20 main keywords related to the field are presented in Table 7.

As evidenced in Table 7, the most frequently used keywords (top 3) regarding income inequality were "income distribution" mentioned in 2,213 documents, "inequality" mentioned in 1,375 documents, and "poverty" mentioned in 1,019 documents. These terminologies keep with the theme because income distribution in a country, especially along gender lines, favors males more than females. Therefore, the imbalance of income and inequalities leads to poverty, especially among women.,[36] Kawachi *et al.*[37]

To better understand income inequality, we used the VOSviewer software to analyze the database visually, constructing a bibliometric networks based on bibliographic data from the source Scopus file, that included fields related to author, keywords, affiliations, and references fields, focusing on a unit of analysis per keywords and co-ocurrence, selecting the options full counting and total link strength, with a network visualization, framed shapes, and curved lines, using predetermined cluster colors. Therefore, this specialized software helps construct networks

Table 7: Top 20 Main Keywords used in the Research on Income Inequality.

Keywords	# of Documents
Income Distribution	2,213
Inequality	1,375
Poverty	1,019
Female	956
Male	891
Socio-economic Factors	812
United States	757
Adult	743
Economic Growth	690
China	501
Middle Aged	434
Economic Development	389
Adolescent	379
Aged	374
Household Income	374
Education	368
Economics	361
Health Status	361
Mortality	337
Controlled Study	325

of scientific publications, journals, researchers, organizations, countries, keywords, or terms[38-40] van Eck *et al.*,[38] Waltman *et al.*,[41] considering a threshold with a minimum occurrence of a term of 71 and a binary counting method. Figure 5 shows the keyword correlated graphic in a network visualization figure.

Figure 5 shows the visual structure formed by the diversity of keywords found in the literature, a strategy used by.[42] The terms are represented and mapped based on the frequency of their occurrences. The network of relationships is identified by five colors and their respective links, based on the following data regarding occurrences and relevance scores for the overall keyword analysis.

The following occurrences are further represented based on the relevance of scores described in Table 8, that contains data obtained directly from VOSViewer, where the column "occurrences" indicates the number of documents in which any given keyword occurs, and "relevance scores" refers to a number that the software calculates for each term to represent specific topics covered by the text data (the higher the score, the more representative of the papers analyzed), allowing to excluding terms with a low relevance score, which are general and unspecific terms.

As shown in Table 8, the published income inequality research with a high relevance score and relatively low occurrences were

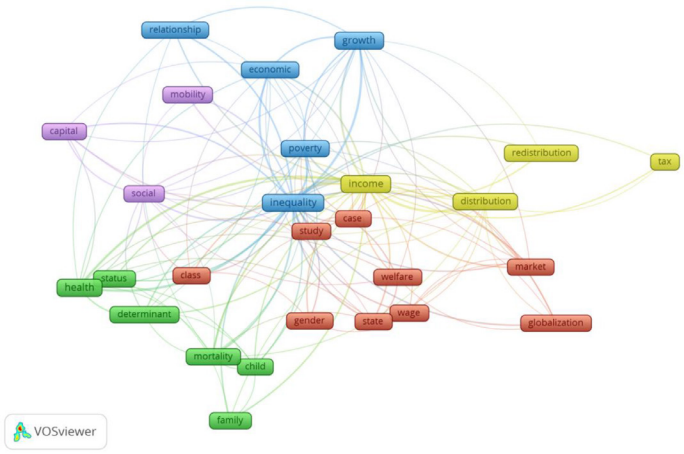

Figure 5: Bibliometric Network by Keywords.
Source: VOSviewer.[42]

distribution, labor, market, wage, welfare, social, and state. The data show that high occurrences do not equate to relevance to the subject of income inequality, as is reflected in mortality having a comparatively low relevance score of 0.1592 and 163 occurrences in the text data compared to labor with an occurrence score of 82 and a very high relevance score of 2.3899. Therefore, the data show that the high occurrence of related key terms to the subject of investigation, income inequality, does not equate to relevance.

RG4: Conduct an analysis of publications by subject area to unearth income inequality in the literature between 1961–2021

In answering RQ2, the second RG analyzed addresses publications by subject area. The distribution by subject area by focusing on articles about subjects related to income inequality is analyzed. Table 9 presents the relevance of essential concepts such as distribution, labor market, wage, and welfare to scientific production regarding income/economic inequality. Table 9 shows the results of the analysis.

As Table 9 shows, the vast concentration of research is in the subject areas of Social Sciences (5,787), Economics, Econometrics, and Finance (5,066), followed by Business Management and Accounting (1,532), Medicine (1,254), and Environmental Science (952).

In sum, to answer RQ2, the top 20 research papers addressing income inequality yielded a total of 18,186 research papers between 1961-2021. This large number of documents based on the keyword search is significant in this research. The analysis of publications by subject areas yielded 13, 659 occurrences in the literature. The relevance score generated by the positive or negative comments based on income inequality shows that the highest relevance score of 3.4449 was in reference to the keyword income having the highest number of occurrences of 2,854. The bibliometric analysis also revealed that 80% of the

scientific scholarly production is mainly from the Social Sciences, Economics, and Environmental Science.

– RQ3: Who are the most influential authors in income inequality research found in the literature between 1961 – 2021?

Table 8: Main Keywords Related to Income Inequality in Terms of Occurrences and Relevance Score.

Keyword	Occurrences	Relevance score
Income	2,854	3.4449
Inequality	3,364	3.3213
Distribution	336	3.1655
Labor	82	2.3899
Market	133	1.8063
Wage	89	1.6127
Welfare	105	0.8781
Social	188	0.6931
State	135	0.6075
Measure	77	0.5701
Employment	75	0.561
Capital	142	0.5565
Determinant	137	0.4862
Latin	76	0.4695
Growth	425	0.4336
Globalization	88	0.4133
Europe	77	0.4039
Study	84	0.3759
Case	90	0.3545
Decomposition	75	0.3326
Child	81	0.3274
Economic	271	0.3246
Family	84	0.3168
Class	80	0.3167
Tax	72	0.3095
Redistribution	103	0.2992
Gender	77	0.2859
Health	425	0.2728
Relationship	114	0.2595
Status	78	0.252
Factor	86	0.2509
Association	72	0.2376
Difference	71	0.2368
Comparison	71	0.1739
Mortality	163	0.1592

- RG5: Determine the influence structure by citation (authors), based on the number of citations

To study the citation structure of economic/income inequality research, methodology used by Laengle, *et al.*,[43] was followed. In Table 10, the total production of papers published by year, the total citation of those articles, an indicator named "Average Citation per Publication per Year" (ACPY) was incorporated to analyze the growth of the field. This analysis took into consideration that if a year has P publications and C citations in 44 publication years, within the evaluation period 1968 to 2021, then ACPY of 1966 will be C/44P; 1974 will be C/43P; 1978 will be C/42P . . . respectively). This helped to identify the most influential authors on the topic of income inequality shown in Table 10.

RG5a: Influence structure—presenting an analysis of the most influential papers in the subject and the leading authors in terms of the number of citations and average citation per year indexes.

The results presented in Table 10 show that the Average Citation Per Year (ACPY) that is higher than 100 as an indicator of influence includes 25 periods, meanwhile in 5 periods, there was an ACPY over 50 (but less than 100); in 2 periods it presented an ACPY over 25 (but less than 50), and in 18 periods presented an ACPY over 5 (but less than 25).

RG5b: Most Influential Authors in the Research Literature

For the analysis related to the most productive and influential authors, from the bibliometric analysis, data in terms of TP = Total Papers; TC = Total Cites, CPP = citations per paper, and H index for the authors regarding the papers published related to income inequality is presented. In Table 11, the top 20 authors' average Citations Per Paper (CPP) is included.

Table 11 shows a highly relevant data analysis considering the influence of the most influential authors on the topic of general productivity on income inequality based on the analysis performed using the Scopus database. The higher production of total papers is not necessarily an equivalency of higher influence, as evidenced in Kennedy's total of 5,907 citations and a calculated index of Citations Per Paper (CPP) of 369.2. In contrast, Kawachi *et al.*,[37] has a total of 9,219 cites but a lesser calculated index for CPP of 119.7); the critical aspect is looking at the CPP weighting for relevance.

RG5c: Most Relevant Papers by Citation

In answer to RG5, the most cited papers addressing income inequality are chronicled below. The following Table 12 includes information related to the respective papers in terms of a Journal (J), Total Citations (TC), title, authors, year of publication, and

Table 9: Number of Documents by Subject Area Related to Income Inequality.

Ck	Subject area	Documents	%	%A
1.	Social Sciences	5,787	32.01%	32.01%
2.	Economics, Econometrics and Finance	5,066	27.68%	59.69%
3.	Business, Management and Accounting	1,532	8.42%	68.11%
4.	Medicine	1,254	6.90%	75.01%
5.	Environmental Science	952	5.23%	80.24%
6.	Arts and Humanities	861	4.73%	84.97%
7.	Psychology	517	2.84%	87.81%
8.	Mathematics	384	2.11%	89.92%
9.	Agricultural and Biological Sciences	271	1.49%	91.41%
10.	Energy	230	1.26%	92.68%
11.	Decision Sciences	225	1.24%	93.91%
12.	Engineering	219	1.20%	95.12%
13.	Earth and Planetary Sciences	201	1.11%	96.22%
14.	Computer Science	149	0.82%	97.04%
15.	Multidisciplinary	144	0.79%	97.83%
16.	Biochemistry, Genetics and Molecular Biology	104	0.57%	98.41%
17.	Nursing	67	0.37%	98.77%
18.	Physics and Astronomy	64	0.35%	99.13%
19.	Dentistry	41	0.23%	99.35%
20.	Neuroscience	28	0.15%	99.51%
21.	Health Professions	24	0.13%	99.64%
22.	Materials Science	14	0.08%	99.71%
23.	Pharmacology, Toxicology, and Pharmaceutics	13	0.07%	99.79%
24.	Chemistry	12	0.07%	99.85%
25.	Immunology and Microbiology	11	0.06%	99.91%
26.	Veterinary	9	0.05%	99.96%
27.	Chemical Engineering	7	0.04%	100%

the average Citation per Year (C/Y), the results obtained in the quantitative analysis are presented in Table 12.

Table 12 presents interesting data regarding indicators about total citation and citation per year, since the first publication entitled "Health inequalities among British civil servants: the Whitehall II study". The "Whitehall II" study is the most cited work on the list, with a total of 2,407 citations and a citation per year proportion of 80. Conversely, the second most cited article corresponds to the work "Practitioners' corner: A note on the theme of too many instruments," with a citation per year of 179 and an overall citation score of 2,148. Furthermore, four of the top 10 journals are domiciled in the United Kingdom and four in the United States. The remaining two journals in the top 10 publications (see Table 12) are from France, another developed European country. These journal ranking results are in line with the overall findings that most of the articles addressing income inequality have been produced in developed countries. To better understand the relationship between the total number of citations and the proportion year, the following Figure 6 shows a comparative contrast between those two variables.

In Figure 6, it is apparent that some highly cited papers are not necessarily the most influential works over the last 60 years (1921 – 2021). Interestingly, a significant work with noticeable citation per year may not have a high total citation, reflecting a contrast among indicators. For example, "The association between income and life expectancy in the United States, 2001-2014," – published by JAMA - Journal of the American Medical Association, see Table 12, accounts for only 891 Total Citations (TC) and Citations per Year (C/Y) of 178.2, compared to "The Lancet" that had 2,407 TC and a C/Y of 80.2.

Table 10: Annual Citation Structure of "Income Inequality" Research.

Year	Total production	Total citation	ACPY	>100	>50	>25	>5
1968	1	52	0.98	0	0	0	1
1969	2	43	0.83	0	0	0	1
1970	2	0	0.00	0	0	0	0
1971	4	0	0.00	0	0	0	0
1972	1	50	1.02	0	0	0	1
1973	4	496	10.33	0	0	0	1
1974	15	0	0.00	0	0	0	0
1975	5	0	0.00	0	0	0	0
1976	12	255	5.67	0	0	0	1
1977	7	108	2.45	0	0	0	1
1978	10	293	6.81	0	0	0	1
1979	16	485	11.55	0	0	0	1
1980	27	90	2.20	0	0	0	1
1981	15	42	1.05	0	0	0	1
1982	23	692	17.74	0	0	0	1
1983	36	362	9.53	0	0	0	1
1984	36	671	18.14	0	0	0	1
1985	31	452	12.56	0	0	0	1
1986	19	466	13.31	0	0	0	1
1987	28	450	13.24	0	0	0	1
1988	39	1129	34.21	0	0	1	0
1989	33	501	15.66	0	0	0	1
1990	46	597	19.26	0	0	0	1
1991	42	2905	96.83	0	1	0	0
1992	41	1241	42.79	0	0	1	0
1993	49	1631	58.25	0	1	0	0
1994	50	2488	92.15	0	1	0	0
1995	53	2248	86.46	0	1	0	0
1996	63	7744	309.76	1	0	0	0
1997	99	9974	415.58	1	0	0	0
1998	116	6740	293.04	1	0	0	0
1999	135	6609	300.41	1	0	0	0
2000	106	11448	545.14	1	0	0	0
2001	151	5565	278.25	1	0	0	0
2002	128	9505	500.26	1	0	0	0
2003	138	9680	537.78	1	0	0	0
2004	198	9332	548.94	1	0	0	0
2005	202	7150	446.88	1	0	0	0
2006	200	7839	522.60	1	0	0	0
2007	229	6674	476.71	1	0	0	0
2008	241	8939	687.62	1	0	0	0
2009	294	11568	964.00	1	0	0	0
2010	387	8223	747.55	1	0	0	0
2011	342	7655	765.50	1	0	0	0
2012	394	7696	855.11	1	0	0	0
2013	487	5845	730.63	1	0	0	0
2014	464	6131	875.86	1	0	0	0
2015	532	7119	1186.50	1	0	0	0
2016	675	4810	962.00	1	0	0	0
2017	658	3614	903.50	1	0	0	0
2018	761	2444	814.67	1	0	0	0
2019	830	1269	634.50	1	0	0	0
2020	895	1103	1103.00	1	0	0	0
2021	1,010	72	72.00	0	1	0	0
TOTAL				25	5	2	18

Table 11: Top 20 Authors by Average Citations Per Paper (CPP).

#	Author	Total papers	Total Cites	CPP (Citations Per Paper)	Author´s H-index
1	Kennedy, B.P.	16	5,907	369.2	31
2	Lynch, J.	20	5,714	285.7	82
3	Wilkinson, R.G.	25	4,490	179.6	44
4	Pickett, K.E.	24	3,511	146.3	44
5	Kawachi, I.	77	9,219	119.7	126
6	Subramanian, S.V.	30	2,898	96.6	89
7	Jenkins, S.P.	19	1,265	66.6	37
8	Elgar, F.J.	20	1,014	50.7	35
9	Dorling, D.	15	563	37.5	43
10	Wan, G.	15	549	36.6	22
11	Atkinson, A.B.	22	745	33.9	32
12	Burkhauser, R.V.	21	582	27.7	34
13	Ram, R.	27	553	20.5	28
14	Li, S.	22	393	17.9	23
15	Shahbaz, M.	16	250	15.6	71
16	Turnovsky, S.J.	18	266	14.8	37
17	Pabayo, R.	15	194	12.9	18
18	Zaman, K.	22	198	9.0	35
19	Slottje, D.J.	16	108	6.8	19
20	Gupta, R.	18	68	3.8	46

Table 12: Top 50 Most Cited Papers Regarding Income Inequality.

R	J	TC	Title	Authors	Year	C/Y
1	The Lancet	2,407	Health inequalities among British civil servants: the Whitehall II study.	Marmot M.G., Stansfeld S., Patel C., North F., Head J., White I., Brunner E., Feeney A., Marmot M.G., Smith G.D.	1991	80.2
2	Oxford Bulletin of Economics and Statistics	2,148	Practitioners' corner: A note on the theme of too many instruments.	Roodman D.	2009	179.0
3	American Journal of Public Health	1,962	Social capital, income inequality, and mortality.	Kawachi I., Kennedy B.P., Lochner K., Prothrow-Stith D.	1997	81.8
4	Quarterly Journal of Economics	1,644	Income inequality in the United States, 1913-1998.	Piketty T., Saez E.	2003	91.3
5	World Bank Economic Review	1,360	A new data set measuring income inequality.	Deininger K., Squire L.	1996	54.4
6	Divided we stand: Why inequality keeps rising	1,265	Divided we stand: Why inequality keeps rising.	Organisation for Economic Cooperation and Development (OECD)	2011	126.5
7	Growing Unequal? Income Distribution and Poverty in OECD Countries	1,198	Growing Unequal? Income Distribution and Poverty in OECD Countries.	Organisation for Economic Cooperation and Development (OECD)	2008	92.2
8	Journal of Economic Growth	1,120	Growth is good for the poor.	Dollar D., Kraay A.	2002	58.9
9	Journal of Economic Growth	1,072	Inequality and growth in a panel of countries.	Barro R.J.	2000	51.0
10	Social Science and Medicine	1,045	Income inequality and population health: Review and explanation.	Wilkinson R.G., Pickett K.E.	2006	69.7
11	The Lancet	1,018	Adolescence and the social determinants of health.	Viner R.M., Ozer E.M., Denny S., Marmot M., Resnick M., Fatusi A., Currie C.	2012	113.1
12	European Economic Review	1,017	Income distribution, political instability, and investment.	Alesina A., Perotti R.	1996	40.7
13	British Medical Journal	942	Income inequality and mortality: Importance to health of income, psychosocial environment, or material conditions.	Lynch J.W., Smith G.D., Kaplan G.A., House J.S.	2000	44.9
14	JAMA - Journal of the American Medical Association	891	The association between income and life expectancy in the United States, 2001-2014.	Chetty R., Stepner M., Abraham S., Lin S., Scuderi B., Turner N., Bergeron A., Cutler D.	2016	178.2
15	British Medical Journal	839	Inequality in income and mortality in the United States: Analysis of mortality and potential pathways.	Kaplan G.A., Pamuk E.R., Lynch J.W., Cohen R.D., Balfour J.L.	1996	33.6
16	Social Science and Medicine	795	Why do poor people behave poorly? Variation in adult health behaviours and psychosocial characteristics by stages of the socioeconomic life course.	Lynch J.W., Kaplan G.A., Salonen J.T.	1997	33.1
17	American Economic Review	786	A reassessment of the relationship between inequality and growth.	Forbes K.J.	2000	37.4

Table 12: Cont'd.

R	J	TC	Title	Authors	Year	C/Y
18	Ecological Economics	717	Income, inequality, and pollution: A reassessment of the environmental Kuznets curve.	Torras M., Boyce J.K.	1998	31.2
19	Review of Economic Studies	705	A Theory of Trickle-Down Growth and Development.	Aghion P., Bolton P.	1997	29.4
20	Social Science and Medicine	686	Income inequality and health: A causal review.	Pickett K.E., Wilkinson R.G.	2015	114.3
21	The Lancet	684	The health and health system of South Africa: historical roots of current public health challenges.	Coovadia H., Jewkes R., Barron P., Sanders D., McIntyre D.	2009	57.0
22	Journal of Economic Growth	648	Finance, inequality and the poor.	Beck T., Demirgüç-Kunt A., Levine R.	2007	46.3
23	Journal of Economic Literature	639	Cross-National Comparisons of Earnings and Income Inequality.	Gottschalk P., Smeeding T.M.	1997	26.6
24	NBER Macroeconomics Annual	609	Inequality and Growth.	Bénabou R.	1996	24.4
25	Review of Income and Wealth	602	Equivalence scales, well-being, inequality, and poverty: Sensitivity estimates across ten countries using the luxembourg income study (lis) database.	Buhmann B., Rainwater L., Schmaus G., Smeeding T.M.	1988	18.2
26	Milbank Quarterly	601	Is income inequality a determinant of population health? Part 1. A systematic review.	Lynch J., Smith G.D., Harper S., Hillemeier M., Ross N., Kaplan G.A., Wolfson M.	2004	35.4
27	Nature	592	Global non-linear effect of temperature on economic production.	Burke M., Hsiang S.M., Miguel E.	2015	98.7
28	American Political Science Review	588	The correlates of change in international financial regulation.	Quinn D.	1997	24.5
29	Journal of Economic Literature	580	Distributional effects of globalization in developing countries.	Goldberg P.K., Pavcnik N.	2007	41.4
30	British Medical Journal	573	Income distribution and mortality: Cross sectional ecological study of the Robin Hood index in the United States.	Kennedy B.P., Kawachi I., Prothrow-Stith D.	1996	22.9
31	American Economic Review	563	Inequality among world citizens: 1820-1992.	Bourguignon F., Morrisson C.	2002	29.6
32	Journal of Economic Perspectives	553	Income inequality, equality of opportunity, and intergenerational mobility.	Corak M.	2013	69.1
33	Social Science Quarterly	553	Standardizing the world income inequality database.	Solt F.	2009	46.1
34	Epidemiologic Reviews	543	Income inequality and health: What have we learned so far?.	Subramanian S.V., Kawachi I.	2004	31.9
35	Social Science and Medicine	535	Social Environment and Physical activity: A review of concepts and evidence.	McNeill L.H., Kreuter M.W., Subramanian S.V.	2006	35.7

Table 12: Cont'd.

R	J	TC	Title	Authors	Year	C/Y
36	Regional Studies	523	Regions, globalization, development.	Scott A.J., Storper M.	2003	29.1
37	American Economic Review	516	Fairness and redistribution.	Alesina A., Angeletos G.-M.	2005	32.3
38	Journal of Political Economy	510	Barriers to technology adoption and development.	Parente S.L., Prescott E.C.	1994	18.9
39	Quarterly Journal of Economics	504	Social mobility and redistributive politics.	Piketty T.	1995	19.4
40	BMJ	494	Socioeconomic determinants of health: Health and social cohesion: Why care about income inequality?.	Kawachi I., Kennedy B.P.	1997	20.6
41	Health Affairs	471	The influence of income on health: Views of an epidemiologist.	Marmot M.	2002	24.8
42	Annual Review of Sociology	468	Family structure and the reproduction of inequalities.	McLanahan S., Percheski C.	2008	36.0
43	Demography	465	The age of extremes: Concentrated affluence and poverty in the twenty-first century.	Massey D.S.	1996	18.6
44	Annual Review of Sociology	463	Socio-economic position and health: The independent contribution of community socioeconomic context.	Robert S.A.	1999	21.0
45	Social Science and Medicine	461	Social capital and health promotion: A review.	Hawe P., Shiell A.	2000	22.0
46	American Journal of Sociology	456	Income inequality and income segregation.	Reardon S.F., Bischoff K.	2011	45.6
47	Journal of Law and Economics	456	Inequality and violent crime.	Fajnzylber P., Lederman D., Loayza N.	2002	24.0
48	Public Choice	446	Determinants of generalized trust: A cross-country comparison.	Bjørnskov C.	2007	31.9
49	Health Services Research	445	Income inequality and health: Pathways and mechanisms.	Kawachi I., Kennedy B.P.	1999	20.2
50	Quarterly Journal of Economics	443	The changing tolerance for income inequality in the course of economic development.	Hirschman A., Rothschild M.	1973	9.2

To better understand those relevant works, further information about the ten most influential articles is described in Table 13.

As shown in Table 13, the most cited and influential papers present various research works related to healthy behaviors, social environments, job design, and the consequences of income inequality. Furthermore, these articles highlight themes related to financial sector development, per capita density, shares of income and wages, data on Gini coefficients, wage gaps in OECD countries, household wealth, consumption patterns, in-kind public services, and population health. These articles were assessed as most influential from a huge pool of papers published between 1961 and 2021. Finally, Table 14 lists the number of published papers on income inequality related to policies, taxes, and gender.

As indicated in Table 14, the descriptive analysis regarding the total number of papers published from 1961 to 2021 related to income inequality in terms of policies, taxes, and gender, reflects a positive trend over the last 60 years. Furthermore, the data indicate that research related to income inequality as a general topic had the highest level of publications, as follows: income inequality (11,453) by policies (3,325), taxes (990), and gender (594). To obtain a more precise sense of the prevalence of income

equality vis-a-vis policies, taxes, and gender, the following graphic, Figure 7, presents a comparative analysis of the total productivity considering general and specific subjects.

As shown in Figure 7, both the trends and the total productivity of the subjects of interest, income inequality, policies, taxes, and gender indicate that comparatively, income equality reflects the highest number of publications per year11, 453, when measured against other pertinent factors of policies, taxes, and gender, yielding 4,909 articles combined. Regarding the contribution per country, Table 15 comprises the total productivity per country for income inequality and related subjects: policies, taxes, and gender.

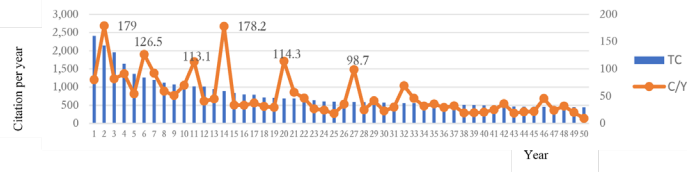

Figure 6: Descriptive Comparison by Contrast in Total Cites and Citation per Year Indicator.

Concerning the data in Table 15, the two most productive countries are the United States and the United Kingdom (two developed countries), yielding 5,134 for all the subjects examined in the scope of the study. China, a quasi-developing country, has the third place for publications (691) addressing inequality and policies. Germany is fourth for articles addressing taxes (85), and Canada is third (44) for related topics that address gender. Figure 8 reflects the compelling contrast in each related subject based on the total production of papers focusing on income inequality.

Table 13: Most Influential Articles with Overview.

Authors / Year	Title / Source	Brief Overview
Marmot, M.G., Stansfeld, S., Patel, C., North, F., Head, J., White I., Brunner, E., Feeney, A., Marmot, M.G., Smith, G.D. (1991)[44]	Health inequalities among British civil servants: the Whitehall II study	The Whitehall study of British civil servants begun in 1967, showed a steep inverse association between social class, as assessed by grade of employment, and mortality from a wide range of diseases. Between 1985 and 1988 we investigated the degree and causes of the social gradient in morbidity in a new cohort of 10 314 civil servants (6900 men, 3414 women) aged 35-55 (the Whitehall II study). Self-perceived health status and symptoms were worse in subjects in lower-status jobs. There were clear employment grade differences in health-risk behaviours including smoking, diet, and exercise, in economic circumstances, in possible effects of early-life environment as reflected by height, in social circumstances at work (e.g., monotonous work characterized by low control and low satisfaction), and in social supports. Healthy behaviours should be encouraged across the whole of society; more attention should be paid to the social environments, job design, and the consequences of income inequality.
Roodman, D. (2009)[45]	Practitioners' corner: A note on the theme of too many instruments	The difference and system Generalized Method of Moments (GMM) estimators are growing in popularity. As implemented in popular software, the estimators easily generate instruments that are numerous and, in system GMM, potentially suspect. A large instrument collection overfits endogenous variables even as it weakens the Hansen test of the instruments' joint validity. This paper reviews the evidence on the effects of instrument proliferation, and describes and simulates simple ways to control it. It illustrates the dangers by replicating Forbes [American Economic Review (2000) Vol. 90, pp. 869–887] on income inequality and Levine *et al.* [Journal of Monetary Economics] (2000) Vol. 46, pp. 31–77] on financial sector development. Results in both papers appear driven by previously undetected endogeneity.
Kawachi, I., Kennedy, B. P., Lochner, K., Prothrow-Stith, D. (1997)[37]	Social capital, income inequality, and mortality	Recent studies have demonstrated that income inequality is related to mortality rates. It was hypothesized, in this study, that income inequality is related to reduction in social cohesion and that disinvestment in social capital is in turn associated with increased mortality. METHODS: In this cross-sectional ecologic study based on data from 39 states, social capital was measured by weighted responses to two items from the General Social Survey: per capita density of membership in voluntary groups in each state and level of social trust, as gauged by the proportion of residents in each state who believed that people could be trusted. Age-standardized total and cause-specific mortality rates in 1990 were obtained for each state. RESULTS: Income inequality was strongly correlated with both per capita group membership (r = -.46) and lack of social trust (r = .76). In turn, both social trust and group membership were associated with total mortality, as well as rates of death from coronary heart disease, malignant neoplasms, and infant mortality. CONCLUSION: These data support the notion that income inequality leads to increased mortality via disinvestment in social capital.

Table 13: Cont'd.

Authors / Year	Title / Source	Brief Overview
Piketty, T., Saez, E. (2003)[1]	Income inequality in the United States, 1913-1998	This paper presents new homogeneous series on top shares of income and wages from 1913 to 1998 in the United States using individual tax returns data. Top income and wages shares display a U-shaped pattern over the century. Our series suggest that the large shocks that capital owners experienced during the Great Depression and World War II have had a permanent effect on top capital incomes. We argue that steep progressive income and estate taxation may have prevented large fortunes from fully recovering from these shocks. Top wage shares were flat before World War II, dropped precipitously during the war, and did not start to recover before the late 1960s but are now higher than before World War II.
Deininger, K., Squire, L. (1996)[46]	A new data set measuring income inequality	This article presents a new data set on inequality in the distribution of income. The authors explain the criteria they applied in selecting data on Gini coefficients and on individual quintile groups' income shares. Comparison of the new data set with existing compilations reveals that the data assembled here represent an improvement in quality and a significant expansion in coverage. Based on this new data set, the authors do not find a systematic link between growth and changes in aggregate inequality. They do find a strong positive relationship between growth and reduction of poverty.
Organization for Economic Cooperation and Development (OECD) (2011)[8]	Divided we stand: Why inequality keeps rising	In the three decades to the recent economic downturn, wage gaps widened and household income inequality as measured by GINI increased in a large majority of OECD countries. This occurred even when countries were going through a period of sustained economic and employment growth. This report analyses the major underlying forces behind these developments. It examines the impact economic globalisation, skill-biased technological progress, institutional and regulatory reforms have on the distribution of earnings. The report further provides evidence of how changes in family formation and household structures have altered household earnings and income inequality. It documents how tax and benefit systems have changed the ways household incomes are distributed. The report discusses which policies are most promising to counter increases in inequalities.
Sarfati, H. (2009).[2]	Growing Unequal? Income Distribution and Poverty in OECD Countries	Growing Unequal? brings together a range of analyses on the distribution of economic resources in OECD countries. The evidence on income distribution and poverty covers, for the first time, all 30 OECD countries in the mid-2000s, while information on trends extending back to the mid-1980s is provided for around two-thirds of the countries. The report also describes inequalities in a range of domains (such as household wealth, consumption patterns, in-kind public services) that are typically excluded from conventional discussion about the distribution of economic resources among individuals and households. The report provides evidence of a fairly generalised increase in income inequality over the past two decades across the OECD, but the timing, intensity, and causes of the increase differ from what is typically suggested in the media. Precisely how much inequality there is in a society is not determined randomly, nor is it beyond the power of governments to change, so long as they take note of the sort of up-to-date evidence included in this report. This report includes StatLinks, URLs linking tables and graphs in the book to Excel® spreadsheets containing the data.
Dollar D., Kraay, A. (2002)[36]	Growth is good for the poor	Average incomes of the poorest quintile rise proportionately with average incomes in a sample of 92 countries spanning the last four decades. This is because the share of income of the poorest quintile does not vary systematically with average income. It also does not vary with many of the policies and institutions that explain growth rates of average incomes, nor does it vary with measures of policies intended to benefit the poorest in society. This evidence emphasizes the importance of economic growth for poverty reduction.
Barro, R. J. (2000)[47]	Inequality and growth in a panel of countries	Evidence from a broad panel of countries shows little overall relation between income inequality and rates of growth and investment. For growth, higher inequality tends to retard growth in poor countries and encourage growth in richer places. The Kuznets curve—whereby inequality first increases and later decreases during the process of economic development—emerges as a clear empirical regularity. However, this relation does not explain the bulk of variations in inequality across countries or over time.

Wilkinson, R.G., Pickett, K.E. (2006)[48]	Income inequality and population health: A review and explanation of the evidence	We identified 168 analyses in 155 papers reporting research findings on the association between income distribution and population health, and classified them according to how far their findings supported the hypothesis that greater income differences are associated with lower standards of population health. Analyses in which all adjusted associations between greater income equality and higher standards of population health were statistically significant and positive were classified as "wholly supportive"; if none were significant and positive, they were classified as "unsupportive"; and if some but not all were significant and supportive, they were classified as "partially supportive." Of those classified as either wholly supportive or unsupportive, a large majority (70%) suggests that health is less good in societies where income differences are bigger. There were substantial differences in the proportion of supportive findings according to whether inequality was measured in large or small areas. The article suggests that the studies of income inequality are more supportive in large areas because in that context income inequality serves as a measure of the scale of social stratification, or how a society is structured hierarchically.

Table 14: Total Number of Papers Published Related to Income Inequality in Terms of Policies, Taxes, and Gender.

Year	Income inequality	Policies	Taxes	Gender
1961	1	0	0	0
1962	2	0	0	0
1963	0	0	0	0
1964	0	0	0	0
1965	0	0	0	0
1966	0	0	0	0
1967	0	0	0	0
1968	2	0	0	0
1969	4	0	0	0
1970	1	0	0	0
1971	0	0	0	0
1972	4	1	0	0
1973	15	3	1	0
1974	5	1	0	0
1975	12	1	1	0
1976	7	0	0	0
1977	10	2	0	0
1978	16	2	2	0
1979	27	4	1	0
1980	15	3	0	0
1981	23	3	3	1
1982	36	7	3	0
1983	36	7	3	1
1984	31	8	0	0
1985	19	5	1	1
1986	28	6	2	0
1987	39	2	1	1
1988	33	3	3	0
1989	46	12	2	0
1990	42	13	4	2
1991	41	9	4	0
1992	49	10	2	2
1993	50	13	5	0
1994	53	13	4	5
1995	63	17	2	1
1996	99	26	10	3
1997	116	32	7	7
1998	135	35	15	13
1999	106	27	6	8
2000	151	34	14	8
2001	128	37	10	6
2002	138	31	10	5
2003	198	64	22	9
2004	202	67	17	7
2005	200	44	19	8
2006	229	59	10	4
2007	241	58	17	9
2008	294	77	30	15
2009	387	113	37	22
2010	342	98	27	16
2011	394	129	28	16
2012	487	142	30	21
2013	464	130	45	20
2014	532	177	51	24
2015	675	178	51	32
2016	658	175	59	38
2017	761	221	70	44
2018	827	238	65	50
2019	896	280	89	67
2020	1012	360	108	66
2021	1071	348	99	62
Total	11,453	3,325	990	594

As shown in Figure 8, it is clear that the highest productivity numbers (3,883) correspond to the United States in all the subjects of interest for the present research, a difference that is also noticeable with the second most productive country being the United Kingdom (1,251). Based on the evidence from our research, it is clear which nation is leading the field on the topic of income inequality globally. Regarding the overall influence of the publications in Scopus, Table 16 shows the total citation per year of the subjects of interest.

Table 16 presents data in terms of total citation descriptive analysis, where it is possible to observe that the higher quantity is related to policies as a related subject (26% of the total citation), followed by taxes (9%) and gender (6%) as the third more cited among all the considered categories. To better understand this relationship between income inequality, policies, taxes, and gender, Figure 9 shows a graphic with the comparative tendencies with the subjects of interest.

As shown in Figure 9, the corresponding trends for the citations related to income inequality have the highest productivity overall, but with a negative trend in recent years. These numbers concerning citations for each topic of interest have policies in second place, followed by taxes and gender. Therefore, less has been written about gender versus policies

In short, the information included in this section is helpful in the understanding of the general productivity relating to RQ3, where the paper "Health inequalities among British civil servants: the Whitehall II study" is the most cited work. Noteworthy, the better proportion of publications related to income inequality corresponds to the work "Practitioners' Corner: A note on the theme of too many instruments." Also, the most cited and influential papers are focused on subjects such as healthy behaviors, social environments, job design, the consequences of income inequality, shares of income and wages, data on Gini coefficients, wage gaps in OECD countries, household wealth, consumption patterns, in-kind public services, and population

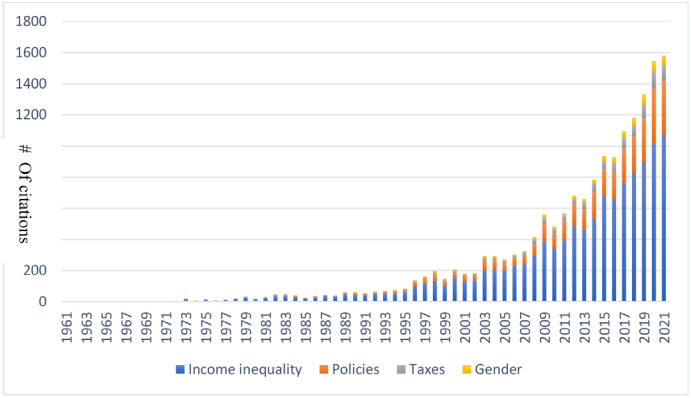

Figure 7: Comparative Graphic in Scientific Productivity in the Study of Income Inequality and Related Subjects in Terms of Policies, Taxes, and Gender.

Table 15: Descriptive Comparative Analysis by Country and Related Subjects—top 10 Countries.

Country	Income inequality	Policies	Taxes	Gender
United States	3,883	1,064	325	216
United Kingdom	1,251	378	113	73
China	691	232	37	31
Germany	645	158	85	35
Canada	564	158	39	44
Australia	492	156	46	34
Italy	432	150	47	17
Spain	414	104	42	20
Netherlands	344	90	26	15
France	338	93	58	13

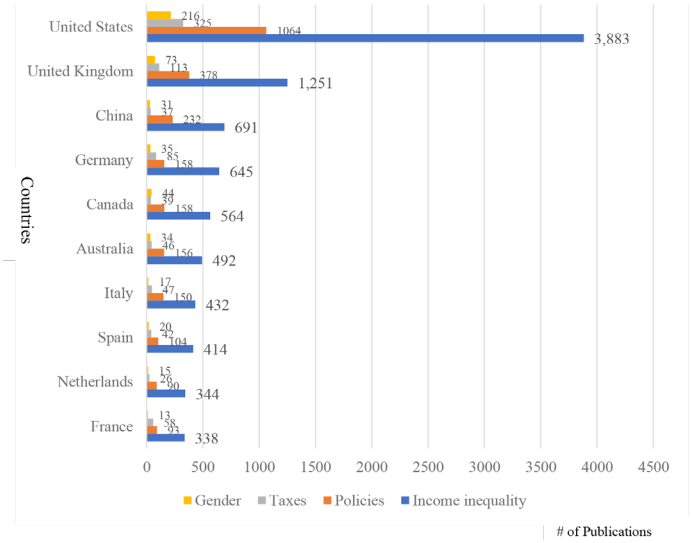

Figure 8: Comparative Analysis by Country and Related Subjects.

health. Together, the results produced by this bibliometric analysis answered RQ3. Now, the focus is on answering RQ4.

Research Question # 4

- RQ4: What are the characteristics of the publications on income inequality of the most productive nations with emphasis on the economic context? (policies, tax structure, and gender).
    - RG6: Assess the information showing a descriptive analysis of income equality in terms of (policies, tax structure, and gender breakdown) in the most productive countries.

To answer RQ4, the frequency of nominal variables based on the name of specific documents addressing income inequality, policies, tax structure, and gender was analyzed, using the data obtained from the World Inequality Lab Dataset.[49] The number

Table 16: Total Citation per Year for Income Inequality as a General Subject with Related Topics of Interest in Policies, Taxes, and Gender (1968-2021).

Year	Income Inequality	Policies	Taxes	Gender
1968	52	0	0	0
1969	43	0	0	0
1970	0	2	0	0
1971	0	0	0	0
1972	50	0	0	0
1973	496	15	13	0
1974	0	0	0	0
1975	0	50	17	0
1976	255	15	0	0
1977	108	0	0	0
1978	293	99	62	0
1979	485	76	5	0
1980	90	0	0	0
1981	42	47	0	9
1982	692	293	0	0
1983	362	80	88	30
1984	671	79	0	0
1985	452	96	3	36
1986	466	99	28	0
1987	450	61	19	10
1988	1,129	223	34	0
1989	501	84	7	0
1990	597	54	19	193
1991	2,905	100	27	0
1992	1,241	68	3	62
1993	1,631	273	211	0
1994	2,488	536	72	126
1995	2,248	292	4	140
1996	7,744	1,113	715	42
1997	9,974	846	403	333
1998	6,740	849	220	413
1999	6,609	985	199	906
2000	11,448	1,638	700	407
2001	5,565	508	114	269
2002	9,505	1,447	664	190
2003	9,680	3,407	2,499	559
2004	9,332	1,218	444	271
2005	7,150	2,417	1,052	461
2006	7,839	1,086	141	60
2007	6,674	2,189	311	430
2008	8,939	2,253	497	790
2009	11,568	2,587	703	1,232
2010	8,223	2,043	797	640
2011	7,655	4,459	1,786	450
2012	7,696	2,251	584	617
2013	5,845	1,873	462	661
2014	6,131	2,326	841	354
2015	7,119	2,836	822	562
2016	4,810	3,126	1,204	569
2017	3,614	2,192	614	441
2018	2,444	2,191	667	457
2019	1,269	1,271	306	338
2020	1,103	703	230	211
2021	72	238	61	74
Total	192,495	50,694	17,648	12,343
%	100%	26%	9%	6%

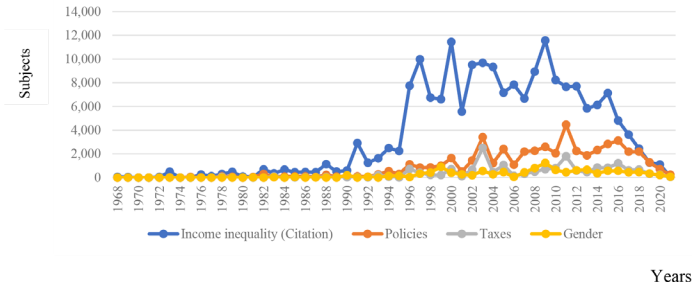

Figure 9: Comparative Tendencies for Income Inequality as a General Subject with Related Topics of Interest in Policies, Taxes, and Gender.

of occurrences of the nominal variable "related document as input" and their corresponding relevance score (treating the qualitative nominal variable as a joint keyword to determine the number of keywords included in the mapping process) is presented in Table 17.

Adapted from the world inequality lab.[49]

Table 17 shows the documents that are relevant input for the world inequality lab datasets. These documents exhibit a high relevance score that represents specific topics covered by the text data and thus portray the income inequality analysis. Hence, the most representative topics about income inequality are Pre-tax labor income, pre-tax labor income ranking, number of tax-units married couples, single adults, fiscal capital, total fiscal income ranking, capital component, corporate debt, equity liability, the market value of the corporation, non-equity liability, government financial, excluding cash, dwelling, national land, private land, government land, life insurance, private pension, personal pension, corporate pension, government pension, national

business, corporate business, government business, personal business, profit business, and financial assets.

To better understand the contrast among relevant documents and their relevance to income inequality in most productive countries in terms of scientific research, Figure 10 shows in terms of density representation, the current type of information available in countries such as the United States, United Kingdom, China, Germany, Canada, Australia, Italy, Spain, Netherlands, and France.

According to Figure 10, it is clear that the access to information related to financial assets, income, fiscal income, life insurance, dwelling, post-tax national income, net personal wealth, the book value of the corporation, consumption of fixed capital of national economy, and corporate non-financial asset represent valuable information to study income inequality. Therefore, the text mining technique using VOSviewer was utilized in obtaining the graphic recommended by Van Eck *et al.*[38,40]

In brief, the information included in this section helps understand the relevance of each topic for the research related to income inequality and the importance of density in the type of document available from the world inequality datasets to address RQ4, where subjects such as pre-tax labor income ranking, number of tax-units per married couple, single adult, fiscal capital, total fiscal income ranking, capital component, corporate debt, and equity liability are noticeably relevant in the field.

DISCUSSION

Economic inequality at the individual, country, and institutional levels continues to have adverse impacts on already marginalized populations across the globe.[5-7] From the bibliometric analysis of scholarly publications utilizing the key terms income inequality between 1961 and 2021 (see Table 1), only six of the top 20 countries contributing to the scientific literature on income equality were from developing nations. Additionally, of the top ten countries that published research on income inequality, only one country is categorized as developing, China, due to income disparity, and the other nine are categorized as developed. From the data analysis (see Table 3), and in answer to *RQ1* and *RG1*, more than 80% of the scholarly publications are concentrated in 50% of the top 20 of the most productive countries (1961 – 2021). The concentration of publications regarding economic inequality in developed nations reflects the global disparity in income and economic equality, where except for Brazil and South Africa, which rank 11th and 16th in our bibliometric analysis (see Table 3), there are no other developing countries from the 2022 Wealth Inequality by Country[50] ranked in findings.

Furthermore, it is essential to note that the United States and China, arguably the two largest economies in the world, represent approximately 50% of all publications dealing with income inequality from (1961 – to 2021). This revelation begs

Table 17: Related Documents as Input.

Related document as input	Occurrences	Relevance score
Financial asset	166	1.9423
Income	164	3.889
Fiscal income	74	0
Life insurance	62	2.4084
Dwelling	58	2.7678
Post tax national income	50	0
Net personal wealth	32	0
Book value of corporation	20	0
Consumption of fixed capital of national economy	20	0
Corporate non-financial asset	20	0
Corporate debt	20	3.5081
Equity liability	20	3.5081
Government debt	20	0
Government financial asset	20	0
Government non-financial asset	20	0
Government capital depreciation	20	0
Gross foreign liability	20	0
Market value national wealth	20	0
Market value of corporation	20	3.5081
National business	20	1.9606
National income price index	20	0
National non-financial asset	20	0
National capital depreciation	20	0
Net domestic product	20	0
Net foreign asset	20	0
Net foreign income	20	0
Net national saving	20	0
Net national wealth to net national income ratio	20	0
Net private saving	20	0
Net private wealth	20	0
Net public wealth	20	0
Net private wealth to net national income ratio	20	0
Net public wealth to net national income ratio	20	0
Non-equity liability	20	3.5081
Population	20	0
Private housing asset	20	0

continued...

Table 17: Cont'd.

Related document as input	Occurrences	Relevance score
Private non-financial asset	20	0
Private capital depreciation	20	0
Private debt	20	0
Private pension	20	2.4084
Tobin	20	0
Gross foreign asset	19	0
Corporate capital depreciation	18	0
Domestic investment	18	0
Employed population	18	0
Excluding cash	18	2.7742
Private business asset	18	0
Residual corporate wealth	18	0
Gross domestic product	17	0
Book value national wealth	16	0
Corporate business	16	1.9606
Government business	16	1.9606
Net corporate wealth to net national income ratio	16	0
Capital component	14	3.889
Domestic financial liability	14	0
Gross private	14	0
National land	14	2.7678
Personal non-financial asset	14	0
Personal business	14	1.9606
Personal pension	14	2.4084
Private land	14	2.7678
Wages and pension	14	0
Domestic financial asset	13	0
Corporate pension	12	2.4084
Fiscal labour income total fiscal income ranking	12	0
Fiscal capital	12	4.0537
Government dwelling	12	0
Government land	12	2.7678
Mixed income	12	0
Personal housing asset	12	0
Profit debt	12	0
Total fiscal income ranking	12	4.0537
Total tax population	12	0
Corporated wellings	11	0
Corporate land underlying dwelling	10	0
Government financial	10	2.9749
Government pension	10	2.4084
Net non-profit wealth	10	0
Net non-profit wealth to net national income ratio	10	0
Net personal wealth to net national income ratio	10	0
Number of tax-units adult	10	0
Number of tax-units married couple	10	4.2484
Other domestic private capital	10	0
Pre-tax labor income pre-tax labor income	10	4.9887
Pre-tax labor income pre-tax labor income ranking	10	4.9887
Private agricultural land	10	0
Private dwelling	10	0
Profit business	10	1.9606
Single adult	10	4.2484

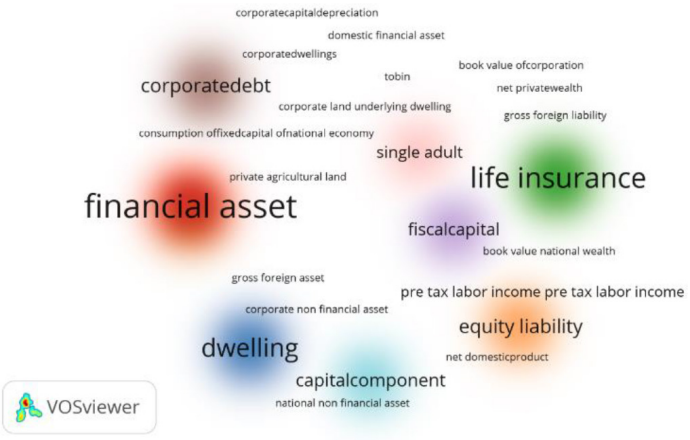

Figure 10: Graphic Representation of the Importance by Density in the Type of Document Available from the World Inequality Datasets.

the question of why is research relating to income inequality concentrated in the USA and China when according to the 2022 World Inequality Report and the World Economic Forum Global Risks Reports, economic inequality continues to be a significant issue in other non-researched prolific developing countries and regions across the globe. It is also interesting to note that there are no data reflecting research on economic inequality from regions and countries such as Africa, Asia (excluding China), Mexico, India, Central, and South America, or the Caribbean, where there continues to be a high prevalence of income and gender inequality (Altuzarra *et al.*,).[5-7,51,52]

The United States had the highest number of "income inequality" publications during 1961 – 1921, representing approximately

34% of total publications with the search term. Interestingly, the most productive institutions during the period of investigation are domiciled in the United States and represent 45% of all institutions. We found it to be revealing that most of the institutions in the United States researching "income inequality" are Ivy League or Carnegie tier 1 classified schools. This finding leads to the question as to why more non-Ivy League institutions in the United States or, for that matter, globally, are not investing time and resources in understanding and explicating "income inequality" research. Another question that requires further research is whether "economic inequality" research would significantly impact policy changes impacting individuals, countries, and regional levels if the researchers doing "income inequality" research were domiciled in the countries and regions that reflect the phenomena. The data analysis also shows that more than 50% of "income inequality" research is published in four top-tier journals.

To understand the most relevant concepts related to the key term "income inequality," a combination of Donthu *et al.*,[20] (2021) performance analysis and science mapping with a particular focus on the co-word citation, bibliographic coupling, network metrics, clustering, and visualization analyses was used. From the bibliometric performance analysis, the top five or 80% of key research areas are social and environmental science, medicine, business, management, accounting, economics, and finance. These areas of concentration are in line with the key terms of poverty, inequality, income distribution, class, and gender that are the primary concentration of "economic inequality" research (see Figure 3). From Table 9, it is clear that there is greater interest in publications that focus on income inequality, distribution, and labor than other related areas, such as the impact "of income inequality" on gender and mortality rates.

Interestingly, the most productive authors in income inequality literature do not have the highest number of citations per paper. For example, Kennedy has more than triple the citation per paper (369.2 vs. 119.7, see Table 11) compared to Kawachi *et al.*,[37] (1997). However, Kawachi has an H-index that is four times as high. Hence, the influence of these authors is not just based on the citations per paper but also on the total citations. The data analysis showed that the most cited papers might not represent the most influential authors (see Figure 4). From the analysis of the Scopus dataset of publications, it is evident that publications relating to economic/income inequality, gender, taxes, and related policies have grown exponentially over the last 60 years. The most cited publications are income inequality with more than 192, 000 compared to policies, taxes, and gender over 50,000, 17,000, and 12,000, respectively (see Table 15).

Income and economics, along with gender and tax inequality, continue to be areas of significant concern for individuals, countries, regions, and globally.[1,3,5,6,23,53,54] The COVID-19 pandemic continues to increase the income gap between the rich and poor in developing and developed countries.[55] With the rising income and economic inequality globally,[9] there must be a diversity of researchers representing a broad cross-section of countries, cultures, and experiences so that the impact and reach of the research are not housed within a limited group of researchers and countries, with whom the economic and income status is counter to the countries and cultures on which their research is based. From the data analyzed, it is apparent that economic/income inequality research is concentrated in a limited group of authors, regions, and countries. This concentration of economic/inequality research in a few top-tier institutions and developed countries is concerning since income and economic inequality is less prevalent, comparatively, in these developed countries where the top-tier authors and scholarly works are domiciled.

The data from our research indicate that there needs to be increased focus by authors and institutions on factors such as gender, taxation, and income distribution policies, all of which are symptomatic of income and economic inequalities globally. For example, an analysis of the data revealed that in 2021 there were seventeen times more articles produced by scholars (1071 vs. 62) on income inequality than there were on gender. Nevertheless, according to extant research–(Amate-Fortes *et al.*,[5,6,24] income inequality continues as a significant factor negatively impacting gender equity.

Scope for Further Research

Based on the findings presented here, it is suggested that further research should be targeted at developing research centers across institutional and author classifications, other than top-tier institutions and high-impact factor authors. Thereby assuring that a broader range of research is reflected in the literature that encompasses the perspective and possible directions from developing countries where there is a higher prevalence of income inequality and the related issues of gender, taxation, and policy disparities, as shown in Figure 11.

Figure 11 shows a summary of the areas that researchers may explore as they seek to add value to the income and inequality research body of knowledge. It is also recommended that a mentorship consortium for institutions and authors be developed to assist with incubating and distributing a broader base of researchers and institutions that focus on income inequality research and the related factors of gender, taxes, and policies.

Of the top twenty most productive (scholarly publications) countries in the world (see Table 3), fifteen are ranked developed and five developing by the United Nations Human Development Index (HDI). This bibliometric research reviewed scholarly publications over the last 60 years, and of these, the overwhelming majority of publications have emanated from institutions and authors that are domiciled in developed countries. Based on

the[50] most countries that reflect income inequality are designated developing countries. Therefore, it would make sense that income inequality research would be a natural byproduct of authors and institutions domiciled in these developing countries. However, this is not the case based on this bibliometric research.

Hence, further research into the factors that determine the domicile of income inequality research needs to be carried out. Answering the questions outlined in Figure 11 will help clarify why most income inequality research resides in four economically and traditionally patriarchal societies, the United States, United Kingdom, China, and Germany. It would be interesting to see the perspectives and empirical research of scholars domiciled in large developing economies such as Africa, Mexico, and Asia (excluding China, Japan, and South Korea, which are included in the top 20 productive nations – See Table 3) as well as South and Central America.

Another area for further research would be to analyze scholarly research using other bibliometric databases than Scopus, which was used for this research—for example, conducting a cross-sectional analysis using Web of Science and Microsoft Academic Search, Crossref API (DOI focused), JSTOR and Grobid (source for PDF or scanned documents). Finally, it would be worthwhile to see if the findings from this research that utilized Scopus would result in similar findings regarding the concentration of income inequality research in top-tier, often Ivy League institutions and acclaimed authors in developed nations.

The top 50 most cited and influential papers (see Tables 12 and 13) regarding income inequality over the last 60 years reveal that the top five papers with the most citations are dated, with the most recent publication date being 2009 with the Oxford Bulletin of Economics and Statistics. Hence, there is great potential for future income inequality research that reflects current and diverse paths to address issues of taxes, gender, and policies on income disparity from a diverse cultural, economic, country, or regional perspective. Our bibliometric research elucidates the need for more current scholarly work on antecedent and latent factors impacting income inequality, especially in the light of massive income and economic disparities exposed by the COVID-19 pandemic. Another area for further research would be gender and taxes relating to income inequality, as these areas are the least researched based on the bibliometric data analyzed.

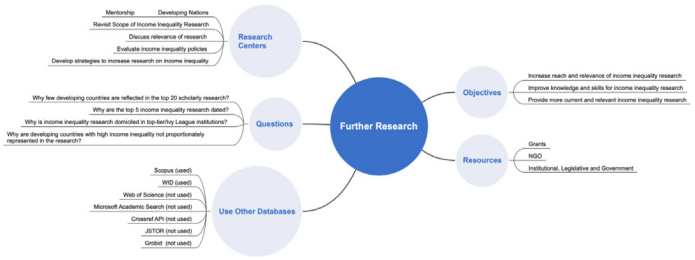

Figure 11: Directions for further research.

CONCLUSION

As a matter of conclusion for the present work, this bibliometric analysis of scholarly publications relating to income/economic inequality over the last 60 years (1961 – 2021) adds to income/economic literature by providing a multidimensional perspective of authorship, diffusion of work (citation), and domicile of scholarly works. The results presented here help to elucidate gaps in research and shed light on the need to expand authorship of works to include scholars from developing countries and a greater diversity of scholars and institutions. The research and dissemination of scholarly works through a wider authorship group and regional and country participation will add greater validity and relevance to income and economic inequality research, as the drivers of the research would have a more significant stake in sharing publications that will help to highlight and ultimately eliminate income/economic inequality, within their own countries and globally.

This bibliometric research reveals that the literature on income inequality has grown exponentially over the past 60 years. However, this growth is concentrated in only a few countries, with the United States, United Kingdom, and China housing the majority of publications and most prolific authors. These top three research prolific countries, through their research institutions and authors, have a responsibility to provide mentorship and resource support to other institutions and authors in developing countries so that a wider body of research that is less skewed to the perspectives of developed countries is reflected in the literature.

The findings suggest that the research available in terms of income inequality is highly concentrated in a few countries that are developed economies, such as the s United States, United Kingdom, China, Germany, and Canada, and most of the most productive institutions that are most productive are also located in developed countries; this data is relevant since income inequality represents a global situation for the vast majority of economies, as well as being a transversal topic for subjects related to the impact of income on poverty, distribution of resources, healthy behaviors, social environments, job design, financial sector development, wages, and income rates are of great interest and are essential and needed areas for continued research.

In that context, it is essential to recognize that these findings indicate the study's contribution to income inequality. Moreover, since published research provides the raw material for policies and law initiatives and concerning the quantity and effectiveness in the transition of those initiatives to existing law, the contribution

of those countries, institutions, and authors has a noticeable representation in wealthy and developing nations.

Within this interpretation, a study of this nature suggests that there is a need for developing countries to increase the level of support and resources allocated to understand income inequality, mainly to increase the knowledge on the topic and enhance the quality and suitableness considered in the process of creation of policies and laws.

Finally, other lines of research should include comparative analysis related to the differences among nations relating to productivity and trends since 1961, including grouping techniques of comparison showing the possible changes in the proportion of the income inequality of nations and the productivity in research, so that it is possible to understand the actual or potential impact of the research field in creating better conditions for the corresponding population.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

Data Availability

The bibliographic data that support the findings of this study are available in Scopus, Elsevier's citation and abstract database, located at https://www.scopus.com, and the World Inequality Lab Dataset located at https://wid.world/data/.

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